

Noninvasive imaging of hypoxia, hypoxia response and drug delivery : a bridge towards individualized patient treatment

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Noninvasive imaging of hypoxia, hypoxia response and drug delivery: A bridge towards individualized patient treatment

1. [¹⁸F]HX4 PET imaging is the better alternative for noninvasive evaluation of tumor hypoxia (this thesis).
2. Sulfonamides directed against CA IX are a promising complement to image active hypoxia responses (this thesis).
3. Cetuximab uptake is not only dependent on EGFR expression levels (this thesis).
4. Development of novel therapeutic agents should also include visualization of drug delivery in addition to imaging of tumor microenvironmental features (this thesis).
5. Quantification of the absolute amount of hypoxia in addition to measuring the exact anatomical localization of hypoxic regions will have a significant impact on outcome after radiotherapy (Dunst, Strahlenther Onkol, 2003).
6. Although the well-established role of FDG in initial tumor staging and in monitoring treatment response, FDG uptake is non-specific and observed in various physiological and non-malignant pathological conditions, indicating the necessity of development of new cancer imaging probes targeting several tumor features separately (Saga, Cancer Science, 2009).
7. High CA IX expression in hypoxic areas of tumors and relatively low expression in normal tissues, coupled with the poor prognosis and the aggressive phenotype associated with CA IX, make this enzyme a candidate target for therapy (Swietach, Cancer Metastasis Rev, 2007).
8. Standardization in PET tumor imaging seems essential in order to untangle the complicated relationship between measured tumor uptake and tumor physiology (Soret, J Nucl Med, 2007).
9. Whenever an animal's life is to be taken, it should be treated with the highest respect (Demers, Science, 2006).
10. Constantia et labore

Ludwig Dubois, 11 februari 2010